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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,149	08/21/2006	Toshio Morohashi	5090-0103PUS1	5825

2292 7590 02/02/2011
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
PATEL, NIRAV G	

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
02/02/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/590,149	MOROHASHI, TOSHIO	
	Examiner	Art Unit	
	Nirav G. Patel	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 December 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 17-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/29/2010*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

It would be of great assistance to the Office if all incoming papers pertaining to a filed application carried the following items:

1. Application number (checked for accuracy, including series code and serial no.).
2. Group art unit number (copied from most recent Office communication).
3. Filing date.
4. Name of the examiner who prepared the most recent Office action.
5. Title of invention.
6. Confirmation number (See MPEP § 503).

Response to Arguments

1. Applicant's arguments filed 12/1/2010 have been fully considered but they are not persuasive.

Applicants assert that Ohyama does not teach that the filtering region is smaller than the block region.

> Paragraph 67 teaches that the reason for the smaller blocks (2.times.2) is so that a wavelet transform can be applied to the wavelet transform (filtering region). As such, the filtering region is smaller than the block, which is of 4.times.4.

Applicants assert that the filtering region cannot be set smaller than the block region as Ohyama determines whether the block regions is important and the filtering region is matched with the block region in size.

> The examiner finds no support of this assertion by the applicants in Ohyama's teachings (as cited by the applicants), but finds teachings to support the examiner's position and interpretation as demonstrated in the response to the first argument.

Information Disclosure Statement

2. The information disclosure statement filed 12/29/2010 complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. It has been placed in the application file, and the information referred to therein has been considered as to the merits.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 8 through 12, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (U.S. Pat. No.: 6,744,927) in view of Ohyama et al. (U.S. Pub. No.: 2002/0191694, “Ohyama”).

1) Regarding Claim 1, Kato teaches an image compression method (Col. 1, Lines 9-13: The invention relates to an image processing system and its method) comprising: a preprocessing step of performing preprocessing on input image data (Figure 7: S1004-1006 perform preprocessing on an inputted image); and

a data compressing step of performing a data compression processing on preprocessed image data (Figure 7: S1007 performs compressing on the preprocessed data),

wherein said preprocessing step includes: a region designating step of discriminating important regions from unimportant regions in said input image data

(Figure 7: The face area is discriminated as the important region and unimportant region (non face area)); and

a filtering step of performing said filtering processing on said unimportant regions for each of said filtering regions to attenuate a high frequency component of said input image data (Figure 7: S1006 and S1106, if the recognized area is not a face area (unimportant), then spatial filtering is applied, which applies a low-pass filter (Col. 7, Lines 7-16)),

said data compressing step includes: a block region dividing step of dividing said preprocessed image data into a plurality of block regions being units for an orthogonal transform, each shape of which is rectangular; an orthogonal transforming step of performing said orthogonal transform processing said image data for each of said block regions; and a quantizing step of quantizing said image data that has been subjected to said orthogonal transform processing for each of said block regions (Col. 9, Lines 10-17: H.261 divides the image into a macroblock of 8 by 8 pixels, which is then transform coded using discrete cosine transform (DCT) (orthogonal transformation), which quantizes the image data which was subjected to DCT); and

Kato fails to teach a filtering region dividing step of dividing said input image data into a plurality of filtering regions, being units for a filtering processing and wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions.

However, in the same field of endeavor, Ohyama teaches a filtering region dividing step of dividing said input image data into a plurality of filtering regions, being units for a filtering processing (Paragraphs 65-67: A block dividing part divides the image into blocks of 2.times.2);

wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions (Paragraph 55: The block re-dividing part (Figure 1, Unit 103) re-divides the blocks (4 pixels by 4 pixels, Paragraph 54) into "small blocks" of 2 pixels by 2 pixels (dividing each block (4x4) by 2 (2n, where n=1), the resulting block having more than two pixels). These clusters are within the block and are smaller than the block as the small block is divided from the block. Figure 1: Following the division of the block to the small block in Unit 103, the data is passed to Unit 104, which performs frequency transform on the image data (Paragraph 56). Figure 3 shows Unit 104 which performs low-pass filtering (104b) on the small blocks (filtering regions) thus performing a filtering process on the filtering regions).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes discriminating important

regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that dividing the filtering regions into smaller regions than the block region (mosaicing) allows for creating smaller areas which can be distinctly analyzed and filtered (due to the fact that they are smaller regions, which can accurately determine if they are regions of interest or non-interest), such that higher compression can take place on the non-interest region and lose spatial information, as taught by Kato, while keeping information related to the region of interest.

The combination would have resulted in modifying the invention of Kato to include dividing the blocks sizes into smaller regions which are within the blocks as taught by Ohyama and then performing the filtering using a low-pass filter.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

2) Regarding Claim 2, Kato teaches an image compression apparatus (Col. 1, Lines 9-13: The invention relates to an image processing system and its method) comprising: preprocessing means for preprocessing input image data (Figure 7: S1007 performs compressing on the preprocessed data); and

data compressing means for performing a data compression processing on preprocessed image data (Figure 7: S1007 performs compressing on the preprocessed data),

wherein said preprocessing means includes: region designating means for discriminating important regions from unimportant regions in said input image data (Figure 7: The face area is discriminated as the important region and unimportant region (non face area)); and

filtering means for performing a filtering processing on said unimportant regions for each of said filtering regions to attenuate the high frequency component of said input image data (Figure 7: S1006 and S1106, if the recognized area is not a face area (unimportant), then spatial filtering is applied, which applies a low-pass filter (Col. 7, Lines 7-16)),

said data compressing step includes: a block region dividing step of dividing said preprocessed image data into a plurality of block regions being units for an orthogonal transform, each shape of which is rectangular; an orthogonal transforming step of

performing said orthogonal transform processing said image data for each of said block regions; and a quantizing step of quantizing said image data that has been subjected to said orthogonal transform processing for each of said block regions (Col. 9, Lines 10-17: H.261 divides the image into a macroblock of 8 by 8 pixels, which is then transform coded using discrete cosine transform (DCT) (orthogonal transformation), which quantizes the image data which was subjected to DCT).

Kato fails to teach a filtering region dividing step of dividing said input image data into a plurality of filtering regions, being units for a filtering processing and wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions.

However, in the same field of endeavor, Ohyama teaches a filtering region dividing step of dividing said input image data into a plurality of filtering regions, being units for a filtering processing (Paragraphs 65-67: A block dividing part divides the image into blocks of 2.times.2);

wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter

common to said respective filtering regions (Paragraph 55: The block re-dividing part (Figure 1, Unit 103) re-divides the blocks (4 pixels by 4 pixels, Paragraph 54) into "small blocks" of 2 pixels by 2 pixels (dividing each block (4x4) by 2 (2n, where n=1), the resulting block having more than two pixels). These clusters are within the block and are smaller than the block as the small block is divided from the block. Figure 1: Following the division of the block to the small block in Unit 103, the data is passed to Unit 104, which performs frequency transform on the image data (Paragraph 56). Figure 3 shows Unit 104 which performs low-pass filtering (104b) on the small blocks (filtering regions) thus performing a filtering process on the filtering regions).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing

each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that dividing the filtering regions into smaller regions than the block region (mosaicing) allows for creating smaller areas which can be distinctly analyzed and filtered (due to the fact that they are smaller regions, which can accurately determine if they are regions of interest or non-interest), such that higher compression can take place on the non-interest region and lose spatial information, as taught by Kato, while keeping information related to the region of interest.

The combination would have resulted in modifying the invention of Kato to include dividing the blocks sizes into smaller regions which are within the blocks as taught by Ohyama and then performing the filtering using a low-pass filter.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

3) Regarding Claim 8, the combination of Kato and Ohyama teaches the limitations of claim 2, where Kato further teaches an image data output terminal for outputting said preprocessed image data (Col. 3, Lines 57-65: The image data outputted from terminals 21a to 21d are delivered to other terminals (outputted) the processed data).

4) Regarding Claim 9, Kato teaches an image transmission system (Col. 1, Lines 9-13: The invention relates to an data communication control apparatus (system) and its control method) in which a preprocessing apparatus is connected to a data compression apparatus through a first communication line (Figure 2: The face-area recognition unit (15) is connected to a data compression (image encoder, 16) via a first communication line), and

in which said data compression apparatus is connected to a data expansion apparatus connected to said data compression apparatus through a second communication line (Figure 2: The image encoder (compression apparatus, 16) is connected to the image decoder (expansion apparatus, 14) via a second communication line),

wherein said preprocessing apparatus includes:

region designating means for discriminating important regions from unimportant regions in said input image data (Figure 7: The face area is discriminated as the important region and unimportant region (non face area));

filtering means for performing said filtering processing on said unimportant regions for each of said filtering regions to attenuate a high frequency component of said input image data (Figure 7: The face area is discriminated as the important region and unimportant region (non face area)); and

data transmission means for transmitting said image data that has been subjected to said filtering processing to said first communication line (Col. 2, Lines 45-50: A data communication control apparatus allows for compression means for compressing image data to be transmitted (after pre-processing)),

said data compressing step includes: a block region dividing step of dividing said preprocessed image data into a plurality of block regions being units for an orthogonal

transform, each shape of which is rectangular; an orthogonal transforming step of performing said orthogonal transform processing said image data for each of said block regions; and a quantizing step of quantizing said image data that has been subjected to said orthogonal transform processing for each of said block regions (Col. 9, Lines 10-17: H.261 divides the image into a macroblock of 8 by 8 pixels, which is then transform coded using discrete cosine transform (DCT) (orthogonal transformation), which quantizes the image data which was subjected to DCT); and

data transmitting means for transmitting encoded image data to said data expansion apparatus through said second communication line (Figure 2: The image encoder (compression apparatus, 16) is connected to the image decoder (expansion apparatus, 14) via a second communication line).

Kato fails to teach a filtering region dividing step of dividing said input image data into a plurality of filtering regions, being units for a filtering processing and wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions.

However, in the same field of endeavor, Ohyama teaches filtering region dividing means for dividing input image data into a plurality of filtering regions being units for a filtering processing (Paragraphs 65-67: A block dividing part divides the image into blocks of 2.times.2); and

wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions (Paragraph 55: The block re-dividing part (Figure 1, Unit 103) re-divides the blocks (4 pixels by 4 pixels, Paragraph 54) into “small blocks” of 2 pixels by 2 pixels (dividing each block (4x4) by 2 (2n, where n=1), the resulting block having more than two pixels). These clusters are within the block and are smaller than the block as the small block is divided from the block. Figure 1: Following the division of the block to the small block in Unit 103, the data is passed to Unit 104, which performs frequency transform on the image data (Paragraph 56). Figure 3 shows Unit 104 which performs low-pass filtering (104b) on the small blocks (filtering regions) thus performing a filtering process on the filtering regions).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato’s teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been

orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that dividing the filtering regions into smaller regions than the block region (mosaicing) allows for creating smaller areas which can be distinctly analyzed and filtered (due to the fact that they are smaller regions, which can accurately determine if they are regions of interest or non-interest), such that higher compression can take place on the non-interest region and lose spatial information, as taught by Kato, while keeping information related to the region of interest.

The combination would have resulted in modifying the invention of Kato to include dividing the blocks sizes into smaller regions which are within the blocks as taught by Ohyama and then performing the filtering using a low-pass filter.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

5) Regarding Claim 10, the combination of Kato and Ohyama teaches the limitations of claim 9, where Ohyama further teaches an image display apparatus that is connected to said first communication line, and that displays said preprocessed image data (Paragraph 63: The image outputting part outputs the image data having undergone image processing and performs display of the image data on the display part).

6) Regarding Claim 11, Kato teaches a data compression preprocessing apparatus (Col. 1, Lines 9-13: The invention relates to an image processing apparatus and its method) for preprocessing image data input to a data compression apparatus that divides said image data into a plurality of rectangular block regions being units for an orthogonal transform, and that performs said orthogonal transform and a quantization on said input data for each of the block regions (Col. 9, Lines 10-17: H.261 divides the image into a macroblock of 8 by 8 pixels, which is then transform coded using discrete cosine transform (DCT) (orthogonal transformation), which quantizes the image data which was subjected to DCT),

the data compression preprocessing apparatus comprising:

a region designating step of discriminating important regions from unimportant regions in said input image data (Figure 7: The face area is discriminated as the important region and unimportant region (non face area));

region designating means for discriminating important regions from unimportant regions in said input image data (Figure 7: The face area is discriminated as the important region and unimportant region (non face area)); and

filtering means for performing said filtering processing on said unimportant regions for each of said filtering regions to attenuate a high frequency component of

said input image data (Figure 7: S1006 and S1106, if the recognized area is not a face area (unimportant), then spatial filtering is applied, which applies a low-pass filter (Col. 7, Lines 7-16)).

Kato fails to teach a filtering region dividing step of dividing said input image data into a plurality of filtering regions, being units for a filtering processing and wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions.

However, in the same field of endeavor, Ohyama teaches a filtering region dividing means for dividing said input image data into a plurality of filtering regions, being units for a filtering processing (Paragraphs 65-67: A block dividing part divides the image into blocks of 2.times.2);

wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions (Paragraph 55: The block re-dividing part (Figure 1, Unit 103) re-divides the blocks (4 pixels by 4 pixels, Paragraph 54) into “small blocks” of 2 pixels by 2 pixels (dividing each block (4x4) by 2 (2n, where n=1), the resulting block having more than two pixels). These clusters are within the block and are smaller than the block as the small block is divided from the

block. Figure 1: Following the division of the block to the small block in Unit 103, the data is passed to Unit 104, which performs frequency transform on the image data (Paragraph 56). Figure 3 shows Unit 104 which performs low-pass filtering (104b) on the small blocks (filtering regions) thus performing a filtering process on the filtering regions).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by

known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that dividing the filtering regions into smaller regions than the block region (mosaicing) allows for creating smaller areas which can be distinctly analyzed and filtered (due to the fact that they are smaller regions, which can accurately determine if they are regions of interest or non-interest), such that higher compression can take place on the non-interest region and lose spatial information, as taught by Kato, while keeping information related to the region of interest.

The combination would have resulted in modifying the invention of Kato to include dividing the blocks sizes into smaller regions which are within the blocks as taught by Ohyama and then performing the filtering using a low-pass filter.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

7) Regarding Claim 12, Kato teaches a non-transitory computer-readable medium having recorded thereon a computer program for preprocessing image data input to a data compression apparatus (Col. 10, Lines 38-46: Storage medium stores program code (for preprocessing data)) that divides said input image data into a plurality of block regions being rectangular units for an orthogonal transform, and that performs said orthogonal transform and a quantization on said input image data for each of said block regions (Col. 9, Lines 10-17: H.261 divides the image into a macroblock of 8 by 8 pixels, which is then transform coded using discrete cosine transform (DCT) (orthogonal transformation), which quantizes the

image data which was subjected to DCT), the computer program comprising procedures for executing:

a region designating step of discriminating important regions from unimportant regions in said input image data (Figure 7: The face area is discriminated as the important region and unimportant region (non face area)); and

a filtering step of performing a filtering processing on said unimportant regions for each of the filtering regions to attenuate a high frequency component of said input image data (Figure 7: S1006 and S1106, if the recognized area is not a face area (unimportant), then spatial filtering is applied, which applies a low-pass filter (Col. 7, Lines 7-16)).

Kato fails to teach a filtering region dividing step of dividing said input image data into a plurality of filtering regions, a filtering region dividing step of dividing said input image data into a plurality of filtering regions, being units for a filtering processing and wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions.

However, in the same field of endeavor, Ohyama teaches a filtering region dividing step of dividing said input image data into a plurality of filtering regions (Paragraphs 65-67: A block dividing part divides the image into blocks of 2.times.2); and wherein each of said filtering regions is a cluster which is included in and is smaller than said

block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions (Paragraph 55: The block re-dividing part (Figure 1, Unit 103) re-divides the blocks (4 pixels by 4 pixels, Paragraph 54) into "small blocks" of 2 pixels by 2 pixels (dividing each block (4x4) by 2 (2n, where n=1), the resulting block having more than two pixels). These clusters are within the block and are smaller than the block as the small block is divided from the block. Figure 1: Following the division of the block to the small block in Unit 103, the data is passed to Unit 104, which performs frequency transform on the image data (Paragraph 56). Figure 3 shows Unit 104 which performs low-pass filtering (104b) on the small blocks (filtering regions) thus performing a filtering process on the filtering regions).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating

filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that dividing the filtering regions into smaller regions than the block region (mosaicing) allows for creating smaller areas which can be distinctly analyzed and filtered (due to the fact that they are smaller regions, which can accurately determine if they are regions of interest or non-interest), such that higher compression can take place on the non-interest region and lose spatial information, as taught by Kato, while keeping information related to the region of interest.

The combination would have resulted in modifying the invention of Kato to include dividing the blocks sizes into smaller regions which are within the blocks as taught by Ohyama and then performing the filtering using a low-pass filter.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

8) Regarding Claim 18, the combination of Kato and Ohyama teach the limitations of claim 2, where Ohyama further teaches wherein said each of the

rectangular regions is obtained by equally dividing each of said block regions by 2 in a vertical direction or is obtained without dividing any of said block regions in a vertical direction (Figure 2A & 2B: The rectangular regions is obtained by dividing the block region (4.times.4) by 2 in a vertical region to obtain the rectangular region that is (2.times.2)).

9) Regarding Claim 19, the combination of Kato and Ohyama teach the limitations of claim 2, where Ohyama further teaches wherein said each of tile rectangular regions is obtained by equally dividing each of said block regions by 2 in a horizontal direction or is obtained without dividing any of said block regions in a horizontal direction (Figure 2A & 2B: The rectangular regions is obtained by dividing the block region (4.times.4) by 2 in a horizontal region to obtain the rectangular region that is (2.times.2)).

5. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Ohyama and in further view of Maeda et al. (U.S. Pat. No.: 6,546,052, "Maeda").

1) Regarding Claim 3, while Kato and Ohyama the limitations of claim 2, they fail to teach wherein said filtering means performs a unification processing for making pixel data within each of said filtering regions discriminated as said unimportant region coincide with one another.

However, in the same field of endeavor, Maeda teaches said filtering means performs a unification processing for making pixel data within each of said filtering regions discriminated as said unimportant region coincide with one another (Col. 8, Lines 43-57: The block former loads the image data and replaces the input pixel by the average value (unification) when the mask information of the pixel indicates that it is a background pixel (unimportant

region), illustrated in Figure 4. This makes the background data (unimportant region) coincide with one another).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions. Maeda's teachings perform the same as they do separately of performing a unification process to make the filtering regions discriminated as unimportant region coincide with one another.

Therefore one of ordinary skill in the art, such as an individual with an advanced degree in electrical engineering could have combined the elements as claimed by

known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that performing a unification process in the filtering region of the unimportant area of Kato would result in a reduction of image data due to the fact that each region is reduced to values which corresponds to an average of the region, thus eliminating the need to save more image data related to an unimportant area, thus achieving higher image compression and a better result.

The combination would have resulted in modifying the invention of Kato and Ohyama to include performing unification of the unimportant regions with the mask regions (important regions) after the filtering of the smaller cluster regions is performed.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

2) Regarding Claim 13, the combination of Kato, Ohyama and Maeda teach the limitations of claim 3, where Kato further teaches each of the rectangular regions is obtained by equally dividing each of said block regions by 2k in a vertical direction and by 2m in a horizontal direction where k and n are natural numbers (Col. 9, Lines 10-17: Using H.261, the image data is divided into block regions of 16 by 16 pixels , where the values of k and m are 8 (natural number), as 2*8 yields 16).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Ohyama and in further view of Taketa et al. (U.S. Pub. No.: 2005/0175251, "Taketa").

1) Regarding Claim 4, while Kato and Ohyama teach the limitations of claim 2, they fail to teach wherein pickup image data picked up by a monitoring camera is input as said input image data, and said important regions and said unimportant regions are designated by an operator.

However, in the same field of endeavor, Taketa teaches pickup image data picked up by a monitoring camera is input as said input image data (Paragraph 150: The usefulness of the invention is found during the application to surveillance camera, which produces image with low quality, and then reproduced with higher quality only when necessary), and said important regions and said unimportant regions are designated by an operator (Paragraph 119: The region of interest may be selected in a manner that a user specifies a specific region in an original image).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an

orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions. Taketa's teachings perform the same as they do separately of acquiring an image by a monitoring camera and allowing an operator to designate the important and unimportant regions.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that allowing an operator to select regions of interest and non-interest allows for an apparatus to selectively encode the region of interest using more space so that the data can be clearly viewed at a later time (reviewing surveillance footage) and using less space to encode the regions of non-interest so that space is not wasted on those areas, yielding in data which can be viewed without loss of region of interest data.

The combination would have resulted in modifying the invention of Kato and Ohyama to include acquiring images from a monitoring camera and allow the

designation of important from unimportant regions by an operator followed by filtering as taught by Kato and Ohyama.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Ohyama in view of Taketa and in further view of Creamer et al. (U.S. Pub. No.: 2005/0146610, "Creamer").

1) Regarding Claim 5, the combination of Kato, Ohyama and Taketa teaches the limitations of claim 2, where Taketa teaches pickup image data picked up by a monitoring camera is input as said input image data (Paragraph 150: The usefulness of the invention is found during the application to surveillance camera, which produces image with low quality, and then reproduced with higher quality only when necessary), and determining important regions and unimportant regions (Figure 2, Unit 18, ROI Selector) automatically. The combination of Kato, Ohyama and Taketa fails to teach using a detection signal from a moving body detection sensor.

However, in the same field of endeavor, Creamer teaches using a trigger from a motion sensor to indicate an event signal (Figure 3: Unit 215 is a trigger (motion sensor)).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions. Taketa's teachings perform the same as they do separately of acquiring an image by a monitoring camera and automatically determine important and unimportant regions. Creamer's teachings perform the same as they do separately of using a detection signal from a moving body detection sensor for determining important and unimportant regions.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that using Creamer's motion sensor to trigger Taketa's ROI to select important and

unimportant regions would allow for a way to select individuals or objects which are moving so that the high resolution images can be reconstructed as taught by Taketa, thus allowing a totally automated system, which is quicker and efficient, and eliminating the need of having an user view the feed of monitoring camera for motion.

The combination would have resulted in modifying the invention of Kato, Ohyama and Taketa to include using a detection signal from a moving body detection sensor to automatically assign important and unimportant regions with Taketa's region determination.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Ohyama and in further view of Zandi (U.S. Pat. No.: 7,068,849).

1) Regarding Claim 7, while Kato and Ohyama teach the limitations of claim 2, they fail to teach wherein said filtering region dividing means divides said input image data into said filtering regions of two or more types different in size.

However, in the same field of endeavor, Zandi teaches filtering region dividing means divides said input image data into said filtering regions of two or more types different in size (Figures 20 & 21: The image data is divided in at least two different sizes (TS Horizontal & Vertical), and the subbands in Figure 21 are rectangular 8 lines high).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the

prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions. Zandi's teachings perform the same as they do separately of dividing input image data into filtering regions of two or more types different in size.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that dividing the data into filtering regions of two or more types different in size allows for a

way to achieving different levels of compression based on the image data, such that higher levels of compression are achieved, thus yielding in a better result which saves memory and bandwidth.

The combination would have resulted in modifying the invention of Kato and Ohyama to include creating filtering regions of two or more types different in size prior to performing the filtering as taught by Kato and Ohyama.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Ohyama in view of Maeda and in further view of Yang (U.S. Pub. No.: 2002/0141496).

1) Regarding Claim 14, while the combination Kato, Ohyama and Maeda teach the limitations of claim 13, they fail to teach wherein a number of AC coefficients obtained by said orthogonal transform processing is suppressed to be equal to or smaller than k x m.

However, in the same field of endeavor, Yang teaches wherein a number of AC coefficients obtained by said orthogonal transform processing is suppressed to be equal to or smaller than k x m (Paragraph 45: The output, which includes AC coefficients, is clipped between -2048 and 2047 (4096 or 2048 * 2, where k is 2048 and m is 2, both being natural numbers)).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the

prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions. Maeda's teachings perform the same as they do separately of performing a unification process to make the filtering regions discriminated as unimportant region coincide with one another. Yang's teachings perform the same as they do separately of suppressing the number of AC coefficients to a value equal to or lower than k x m.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that suppressing the AC coefficients below a value ensures that the DC and AC coefficients can fit into the available space such that the image data can be reconstructed with minimal loss of data.

The combination would have resulted in modifying the invention of Kato, Ohyama and Maeda to include suppressing the AC coefficients such that the number of coefficients falls below a predetermined value prior to quantizing the data, as taught by the combination of Kato, Ohyama and Maeda.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

10. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Ohyama in view of Maeda and in further view of Sung et al. (U.S. Pub. No.: 2005/0074062, "Sung").

1) Regarding Claim 15, while the combination Kato, Ohyama and Maeda teach the limitations of claim 3, they fail to teach wherein said each of the rectangular regions is obtained by equally dividing each of said block regions by 2k in a vertical direction where k is a natural number; and a number of AC coefficients in the vertical direction obtained by said orthogonal transform processing is suppressed to be equal to or smaller than k.

However, in the same field of endeavor, Sung teaches wherein said each of the rectangular regions is obtained by equally dividing each of said block regions by 2k in a

vertical direction where k is a natural number; and a number of AC coefficients in the vertical direction obtained by said orthogonal transform processing is suppressed to be equal to or smaller than k (Paragraph 44: A DCT is performed on the data with a resulting size of 8.times.8 pixels as the block size, thus dividing the data into regions of 2k where k=4 (8). Paragraph 41: The invention filters out (suppresses) AC coefficients (obtained by orthogonal transform) to either 0 or 2-4 depending on the predetermined threshold value, which is less than k (k=4).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions. Maeda's teachings perform the same as they do separately of performing a unification process to make the filtering regions discriminated

as unimportant region coincide with one another. Sung's teachings perform the same as they do separately of dividing image data into rectangular regions by dividing the block regions by 2k in the vertical direction and the number of AC coefficients in the vertical direction are suppressed to be equal or smaller than k.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that suppressing the AC coefficients below a value ensures that the DC and AC coefficients can fit into the available space such that the image data can be reconstructed with minimal loss of data.

The combination would have resulted in modifying the invention of Kato, Ohyama and Maeda to include suppressing the AC coefficients such that the number of coefficients falls below a predetermined value prior to quantizing the data, as taught by the combination of Kato, Ohyama and Maeda.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

2) Regarding Claim 16, while the combination of Kato, Ohyama and Maeda teach the limitations of claim 3, they fail to teach wherein said each of the rectangular regions is obtained by equally dividing each of said block regions by 2m in a horizontal direction where m is a natural number; and a number of AC coefficients in the horizontal

direction obtained by said orthogonal transform processing is suppressed to be equal to or smaller than m.

However, in the same field of endeavor, Sung teaches wherein said each of the rectangular regions is obtained by equally dividing each of said block regions by 2m in a horizontal direction where m is a natural number; and a number of AC coefficients in the horizontal direction obtained by said orthogonal transform processing is suppressed to be equal to or smaller than m (Paragraph 44: A DCT is performed on the data with a resulting size of 8.times.8 pixels as the block size, thus dividing the data into regions of 2m where m=4 (8). Paragraph 41: The invention filters out (suppresses) AC coefficients (obtained by orthogonal transform) to either 0 or 2-4 depending on the predetermined threshold value, which is less than m (m=4).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a

block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions. Maeda's teachings perform the same as they do separately of performing a unification process to make the filtering regions discriminated as unimportant region coincide with one another. Sung's teachings perform the same as they do separately of dividing image data into rectangular regions by dividing the block regions by 2m in the horizontal direction and the number of AC coefficients in the horizontal direction are suppressed to be equal or smaller than m.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that suppressing the AC coefficients below a value ensures that the DC and AC coefficients can fit into the available space such that the image data can be reconstructed with minimal loss of data.

The combination would have resulted in modifying the invention of Kato, Ohyama and Maeda to include suppressing the AC coefficients such that the number of coefficients falls below a predetermined value prior to quantizing the data, as taught by the combination of Kato, Ohyama and Maeda.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Ohyama and in further view of Koshiba et al. (U.S. Pub. No.: 2001/0048720, "Koshiba").

1) Regarding Claim 17, while the combination of Kato and Ohyama teaches the limitations of claim 2, they fail to teach wherein said filtering means performs said filtering processing on said filtering regions including no important region and does not perform said filtering processing on said filtering regions including said important region.

However, in the same field of endeavor, Koshiba teaches wherein said filtering means performs said filtering processing on said filtering regions including no important region and does not perform said filtering processing on said filtering regions including said important region (Paragraph 18: The filtering process applies low pass filtering to the unimportant regions, which effectively simplifies the regions and leaves the important region unfiltered).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.

In combination, Kato's teachings perform the same as they do separately of performing a preprocessing on an image which includes dividing said input image data into a plurality of filtering regions, discriminate important regions from unimportant regions, and performing data compressions on an image which includes dividing the preprocessed image into block regions which are rectangular in shape, performing an

orthogonal transform on each block regions and quantizing the data which has been orthogonally transformed. Ohyama's teachings perform the same as they do separately of dividing said input image data into a plurality of filtering regions, and generating filtering regions for image compression which are included in and are smaller than a block region, containing one or more adjacent rectangular regions, obtained by dividing each of the block regions by 2n having two or more pixels and performing low-pass filtering on the filtering regions. Koshiba's teachings perform the same as they do separately of filtering unimportant regions while leaving the important regions the same.

Therefore one of ordinary skill in the art, such as an individual with a basic degree in electrical engineering could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately.

The results of the combination would have been predictable due to the fact that filtering the unimportant regions allows to reduce the amount of information needed to represent the data while leaving the important region data intact allows to save data which accomplishes higher compression without loosing data.

The combination would have resulted in modifying the invention of Kato and Ohyama to include filtering the unimportant regions while not filtering the important region the same during Kato and Ohyama's filtering step.

Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nirav G. Patel whose telephone number is (571)270-5812. The examiner can normally be reached on Monday - Friday 8 am - 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nirav G. Patel/
Examiner, Art Unit 2624

/Bhavesh M Mehta/
Supervisory Patent Examiner, Art Unit 2624